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10/054,702	10/23/2001	Frank M. Zizzamia	098056/00135	5389

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KRAMER LEVIN NAFTALIS & FRANKEL LLP
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EXAMINER

COBANOGLU, DILEK B

ART UNIT	PAPER NUMBER
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3626

NOTIFICATION DATE	DELIVERY MODE
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03/23/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/054,702	Applicant(s) ZIZZAMIA ET AL.	
	Examiner DILEK B. COBANOGLU	Art Unit 3626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/15/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is in response to the amendment received on 12/02/2008. Claim 2 had been previously canceled. Claims 1, 3-34 remain pending in this application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 3-19, 25-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claim 1 recites "A data processing machine comprising a program storage device readable by said machine said program storage device tangibly embodying a program of instructions executable by the machine to perform a method for predicting the profitability of a commercial insurance policy, said method comprising..."; it's not clear which apparatus is recited in this claim.

Examiner suggests using the language of: "a program storage device readable by a machine..." and the first part of the preamble "a data processing machine" to be taken out. Applicant is invited to look at US Patent 5,710,578 as an example.

B. Claims 13 and 25 recite similar language in the preamble, therefore they are rejected for the same reason given above for claim 1.

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C. Claims 3-12, 14-19, 26-32 are rejected under 35 U.S.C. 112, second paragraph because of dependency. Examiner suggests using a similar language in these dependent claims; such as reciting "the program storage device readable by a machine of claim 1 or claim 13".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 3-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Apte et al. (5,970,464; hereinafter Apte), DeTore et al. (4,975,840; hereinafter DeTore) and further in view of Zizzamia (5,893,072; hereinafter Zizzamia).

A. Claim 1 recites A data processing machine comprising a program storage device readable by said machine said program storage device tangibly embodying a program of instructions executable by the machine to perform a method for predicting the profitability of a commercial insurance policy, said method comprising:

- i. obtaining policyholder data including premium and loss data from a database (Apte: abstract; col. 1, lines 53-60; col. 9, lines 29-36; Fig. 1-14);
- ii. obtaining external data directed to at least one of business level data and household demographics data, the external data having a

plurality of external variables to be used in predicting the profitability of the insurance policy (Apte: col. 3, lines 5-19; Fig. 1-14);

iii. associating the external variables with the policyholder data (Apte: abstract; col. 1, lines 53-67; Fig. 1-14);

iv. evaluating the associated external variables against the policyholder data to identify the individual external variables predictive of the insurance policy's profitability and

v. creating a score based on an individually weighted multivariate statistical model based on said individual external predictive variables, wherein said evaluating external variables includes evaluating the utility of creating new variables from the external variables and creating any appropriate new variables (Apte: abstract; col. 3, lines 44-53; col. 6, line 44- col. 7, line 17; Fig. 1-14),

vi. wherein said score is expressed as a sum of products each of said products being a coefficient multiplied by a variable taken to a power and

vii. wherein said score is a function of at least all of the predictive external variables and any predictive new variables (Apte: abstract; col. 3, lines 44-53; col. 6, line 44- col. 7, line 17; Fig. 1-14).

Apte, however, fails to expressly disclose a method for predicting the profitability of an insurance policy comprising the steps of:

(1) evaluating the associated external variables against the policyholder data to identify the individual external variables

predictive of the insurance policy's profitability; and creating a score based on statistical model; score is expressed as a sum of products each of said products being a coefficient multiplied by a variable taken to a power

(2) a multivariate statistical model.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore and Zizzamia. In particular, DeTore and Zizzamia disclose a method for predicting the profitability of an insurance policy comprising the steps of:

(1) evaluating the associated external variables against the policyholder data to identify the individual external variables predictive of the insurance policy's profitability and creating a score based on statistical model; score is expressed as a sum of products each of said products being a coefficient multiplied by a variable taken to a power (DeTore: abstract; col. 7, lines 9-23; col. 15, lines 42-59, col. 15, line 60 to col. 16, line 19, Fig. 1-12);

(2) a multivariate statistical model (Zizzamia: col. 9, lines 18-21).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the combined teachings of Apte and Zizzamia with the motivation of providing a

method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of Zizzamia with the combined teachings of Apte and Zizzamia with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk (DeTore: col. 1, lines 55-58).

B. Claims 3-12 have been amended to recite “a data processing machine” instead of the method. These claims are rejected for the same reasons given in the previous office action (pages 7-14) and incorporated herein.

C. Claim 13 has been amended now to recite A data processing machine comprising a program storage device readable by said machine~ said program storage device tangibly embodying a program of instructions executable by the machine to perform a method for creating a statistical model that generates a score representative of the profitability of an insurance policy for at least one of a new policyholder and an existing policyholder, said method comprising:

- i. gathering historical policyholder data including loss and premium data (Apte: abstract; col. 1, lines 53-60; col. 9, lines 29-36; Fig. 1-14);
- ii. identifying external data sources having a plurality of external variables, each external variable having a value (Apte: col. 3, lines 5-19; Fig. 1-14);

- iii. calculating a loss ratio for each policyholder in the database based on the working data (Apte: abstract; col. 1, lines 53-60; col. 9, lines 29-36; Fig. 1-14);
- iv. calculating a cumulative loss ratio for a defined group of policyholders in the database (Apte: abstract; col. 1, lines 53-60; col. 9, lines 29-36; Fig. 1-14); and
- v. an individually weighted statistical model (Apte: col. 6, lines 46-60).

Apte, however, fails to expressly disclose a method for creating a statistical model that generates a score representative of the profitability of an insurance policy for at least one of a new policyholder and an existing policyholder, comprising the steps of:

- (a) applying actuarial transformation to the policyholder data to generate working data;
- (b) performing a statistical analysis that investigates the relationship of each external variable and the cumulative loss ratio for the defined group to identify external variables that are predictive of the profitability of the insurance policy;
- (c) utilizing the predictive external variables identified in the previous step to develop a statistical model that generates a score predictive of the profitability of the insurance policy, wherein said performing a statistical

analysis includes evaluating the utility of creating new variables from the external variables and creating any appropriate new variables, and wherein said score is a function of at least all of the predictive external variables and any predictive new variables, wherein said score is expressed as a sum of products, each of said products being a coefficient multiplied by a variable taken to a power, and

(d) a multivariate statistical model.

Nevertheless, this feature is old and well known in the art, as evidenced by DeTore and Zizzamia. In particular, DeTore and Zizzamia disclose a method for creating a statistical model that generates a score representative of the profitability of an insurance policy for at least one of a new policyholder and an existing policyholder, comprising the steps of:

- (a) applying actuarial transformation to the policyholder data to generate working data (DeTore: abstract; col. 16, lines 20-34; Fig. 1-12);
- (b) performing a statistical analysis that investigates the relationship of each external variable and the cumulative loss ratio for the defined group to identify external variables

that are predictive of the profitability of the insurance policy
(DeTore: abstract; col. 4, lines 36-53; Fig. 1-12);

(c) utilizing the predictive external variables identified in the previous step to develop a statistical model that generates a score predictive of the profitability of the insurance policy, wherein said performing a statistical analysis includes evaluating the utility of creating new variables from the external variables and creating any appropriate new variables, and wherein said score is a function of at least all of the predictive external variables and any predictive new variables, wherein said score is expressed as a sum of products, each of said products being a coefficient multiplied by a variable taken to a power,

(DeTore: abstract; col. 4, lines 36-53, col. 15, lines 42-59, col. 15, line 60 to col. 16, line 19, line Fig. 1-12);

(d) a multivariate statistical model (Zizzamia: col. 9, lines 18-21).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of DeTore with the combined teachings of Apte and Zizzamia with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk

(DeTore: col. 1, lines 55-58).

One of ordinary skill would have found it obvious at the time of the invention to combine the teachings of Zizzamia with the combined teachings of Apte and Zizzamia with the motivation of providing a method and apparatus for evaluating the insurability of a potentially insurable risk

(DeTore: col. 1, lines 55-58).

D. Claims 14-19 have been amended to recite “a data processing machine” instead of the method. These claims are rejected for the same reasons given in the previous office action (pages 18-20) and incorporated herein.

E. Claim 20 has been amended to include: wherein said score is expressed as a sum of products, each of said products being a coefficient multiplied by a variable taken to a power. The obviousness of modifying the teaching of Apte to include this limitation (as taught by De Tore) is as addressed above in the rejection of claims 1 and 13 and incorporated herein.

F. Claims 21-22 have not been amended, and Applicant does not appear to argue the separate patentability of these claims. As such, claims 21-22 are rejected for the same reasons given in the previous Office Action (pages 20-21), and incorporated herein.

G. Claims 23 and 25 have been amended to include: wherein said score is expressed as a sum of products, each of said products being a coefficient multiplied by a variable taken to a power. The obviousness of modifying the

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teaching of Apte to include this limitation (as taught by De Tore) is as addressed above in the rejection of claims 1 and 13 and incorporated herein.

H. Claims 24 has not been amended, and Applicant does not appear to argue the separate patentability of this claim. As such, claim 24 is rejected for the same reasons given in the previous Office Action (pages 21-22), and incorporated herein.

I. Claims 26-32 have been amended to recite "a data processing machine" instead of the method. These claims are rejected for the same reasons given in the previous office action (pages 23-24) and incorporated herein.

J. Claim 33 has been amended to include: wherein said score is expressed as a sum of products, each of said products being a coefficient multiplied by a variable taken to a power. The obviousness of modifying the teaching of Apte to include this limitation (as taught by De Tore) is as addressed above in the rejection of claims 1 and 13 and incorporated herein.

K. Claims 34 has not been amended, and Applicant does not appear to argue the separate patentability of this claim. As such, claim 34 is rejected for the same reasons given in the previous Office Action (pages 24), and incorporated herein.

Response to Arguments

6. Applicant's arguments filed 12/02/2008 have been fully considered but they are not persuasive. Applicant's arguments will be addressed in the order in which they appear.

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A. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In response to Applicant's argument about "Apte fails to teach an independently weighted multivariate statistical model or a score based thereon, where said score is a function of at least all of the predictive external variables and any predictive new variables, and where such score is expressed as a sum of products, each of said products being a coefficient multiplied by a variable taken to a power."; Examiner respectfully submits that Apte teaches "**A computer implemented method of underwriting profitability analysis** delivers the analytic process to a wide cross section of insurance decision makers... Data mining techniques are applied to historical policy and claims to extract rules that describe policy holders with homogeneous claim frequency and severity characteristics. **These rule sets are used to classify policy holders into distinct risk groups**, each with its own set of characteristics, including pure premium." In abstract. Apte also teaches under "model viewer: "When the Viewer tab is selected, the viewer screen shown in FIG. 8 is displayed. This screen allows a user to see in further detail particulars about a model or an edited rule set that has been selected from the existing models screen. In addition to identifying the database name on which the model was trained or evaluated, this screen also displays the accuracy estimate of the

model in terms of several statistics.” In col. 6, lines 46-52. De Tore teaches “**A method and apparatus for evaluating the insurability of a potentially insurable risk** has data bases for storing information, and the ability to correlate selected elements of information in respective data bases. Certain elements are assigned weights on the basis of predetermined relationships existing between elements of information in one data base and corresponding elements of information in another... In one embodiment, the system can identify an element of information for which no corresponding information exists, and for which no expert module exists. Other features include the ability to override an expert module and assign a different weight to an element of information, **the use of statistical profiles to adjust assigned weights**, the ability to determine expected profitably resulting from decisions concerning a particular risk, and the provision of additional data bases useful in managing workload and customizing operation of the system.” In abstract. According to www.wikipedia.com, the description of “multivariate statistics or multivariate analysis means a collection of procedures which involve observation and analysis of more than one statistical variables at a time”.

B. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In response to Applicant's argument about “DeTore

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does not use external data at all. DeTore does not teach automatic creation of a multivariate statistical model, or teach generating a score based thereon. DeTore absolutely does not teach that such a score is expressed as a sum of products, each of said products being a coefficient multiplied by a variable taken to a power. Finally, DeTore wholly ignores the issue of creating new variables from external data sources, i.e., "synthetic" variable creation." Examiner respectfully submits that De tore teaches "When no other problems remain to be underwritten, user adopted statistical profiles may be used to adjust one or more of the weights assigned to selected problems on the basis of previously stored statistical profiles relating to the selected problems. A profile is developed when a statistically proven correlation affecting the final rating or weight applicable to a particular problem has been found to exist, and the subject correlation is not reflected in the treatment of the impairment in underwriting data base 24."

C. In response to Applicant's argument about "Zizzamia fails to describe a score expressed as a sum of products, each of said products being a coefficient multiplied by a variable taken to a power. "; Examiner respectfully submits that De Tore teaches "After the individual weights are assigned to each problem, and after the weights are adjusted according to any applicable statistical profiles, the weights must be combined to determine an overall risk assessment for the case. There are several ways in which this can be done. For example, one method is to compare the individual weights to a standard mortality rating to determine a mortality ratio for each problem. The individual ratios can then be combined to

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determine an overall mortality ratio for the individual. In determining the final ratio, it has been found that certain problems or impairments interact to produce positive or negative effects that are not truly represented by a simple additive combination. Block 108 of FIG. 6 represents the process of combining the weights or ratios assigned to individual problems to determine a final ratio or rating. The process of block 108 includes the process of identifying combinations of problems which represent more or less severe impairments than would result if the subject problems occurred individually, and adding (or subtracting) an extra "combination" weight to the total. For example, if an applicant has hypertension (problem A) and is a diabetic (Problem B), individual weights or ratios would be assigned for problem A and problem B, in accordance with the methodology described above, and then the system at block 108 would assign an additional weight or ratio upon recognizing the existence of problems A and B in combination." In col. 15, line 60 to col. 16, line 19.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

8. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DILEK B. COBANOGLU whose telephone number is (571)272-8295. The examiner can normally be reached on 8-4:30.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher L. Gilligan can be reached on 571-272-6770. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. B. C./
Examiner, Art Unit 3626
3/16/2009

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